

REMARKS

In the Office Action, the Examiner indicated that claims 1 through 7 are pending in the application and the Examiner rejected claims 1, 2 and 4-7, and objected to claim 3.

The Objection to the Drawings

On page 2 of the Office Action, the Examiner indicated that Figure 5 should be designated by a legend such as "Prior Art". Applicant submits herewith an amended Figure 5 for the Examiner's approval.

Claim Rejections, 35 U.S.C. §112

At item 5 of the Office Action, the Examiner rejected claims 5-7 under 35 U.S.C. §112, second paragraph. The claims have been amended to specifically identify the IEEE 1394 standard adopted in 1995 and to correct the antecedent basis problem of claim 6. Applicant submits that this overcomes the rejection under 35 U.S.C. § 112, second paragraph. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims under 35 U.S.C. §112.

The Objection to Claim 3

Applicant acknowledges the Examiner's indication that claim 3 would be allowable if rewritten in independent form. In accordance with the Examiner's suggestion, claim 3 has

been rewritten as claim 10 and includes therein the limitations of independent claim 1.

Accordingly, claim 10 is in condition for allowance.

The Present Invention

The present invention is a power supply protection apparatus of a computer system, such as a notebook-type personal computer. In accordance with the present invention, a single diode is included within the computer system, in a power line that is connected to a terminal provided for connecting a power line of an external device to the computer system.

The voltage value on the power line within the computer system is detected by a voltage sensor, and the power line can be disconnected by a switch unit if the detected voltage exceeds a predetermined voltage value, i.e., a value exceeding a voltage level to be protected by the single diode. The power line is connected when the predetermined voltage level is under the predetermined voltage value. Thus, the power line is prevented from carrying an excessive voltage over the predetermined voltage value even if the diode should break down.

In an alternative embodiment, the power line of an external device can be connected to the terminal (and thereby to the power line of the computer system). The diode and switching system of the present invention will protect internal components of the computer system from excessive voltages being presented to the power line of the computer system (and thus to the components of the computer system).

Applicant's Admission of Prior Art ("AAPA")

The AAPA in the subject application teaches a computer system (e.g., a notebook-type PC) which includes a protection circuit 140 comprising two diodes D1 and D2 (Figure 5). This protection circuit 140 is situated on the power line between inner components of the computer system and a terminal which provides external access to a bus 150. As shown in Figure 5, external devices such as devices 152A and 152B can be connected to the bus, and thereby to the terminal and thus the computer system. These devices include a power supply 154 and can comprise devices conforming to the IEEE 1394 standard. Since the IEEE 1394 standard allows an output voltage within the range of 8 volts to 40 volts, and since the computer system may include inner circuitry which may not withstand voltages at the high end of this range, a single diode D3 is typically utilized outside of the computer system to provide protection against such voltages being applied to the bus 150 from external devices 152A , 152B, and the like.

U.S. Patent No. 6,125,448 to Schwan et al.

U.S. Patent No. 6,125,448 to Schwan et al. ("Schwan") teaches a power subsystem for a communication network containing a power bus. The Examiner relies on Schwan for the teaching of a switchable protection circuit which includes a voltage sensor for detecting a voltage value of a power line, wherein a switch is opened or closed for disconnecting or connecting the power line based upon the comparison between the detected voltage value and a predetermined voltage value.

The Examiner has not Established a *prima facie* Case of Obviousness

As set forth in the MPEP:

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify the reference or to combine reference teachings.

MPEP 2143

The pending independent claims (claims 1 and 6) each specifically claim a single diode situated within a first device, with the first device having a terminal which enables its coupling to a second external device. Switching circuitry within the first device controls the application of voltage to the power line independently from the voltage control provided by the single diode. Using this configuration, even if an external device applied to the terminal of the first device inputs to the terminal a voltage in excess of that which can be withstood by the internal circuitry of the first device, the single diode (as opposed to the dual-diode configuration of the prior art) prevents this voltage from harming the internal circuitry of the first device. Further, in the event that the single diode fails, the switching circuitry will still protect the internal components of the first device.

In the present application, applicant distinguishes this claimed invention from the prior art in the AAPA. Specifically, the AAPA explains that in prior art systems, the computer system must have two diodes to provide protection for the internal circuitry. The single diode referred to by the Examiner in rejecting claims 1 and 6 is diode D3 in device 152A of Figure

5, which is connectable to bus 150. This is clearly not part of the first device (the notebook-type PC illustrated in Figure 5).

Applicant has amended the description of the prior art on original page 3 of the application so that the identification of the two-diode protection of the notebook-type PC and the single diode protection of the external device 152A is more clearly set forth. No new matter has been added by these amendments; rather, the description has been amended to more clearly set forth the two-diode protection circuit 140 and the single diode protection circuit D3.

Applicant has amended claim 1 to more clearly recite the distinction between the first device (the computer system) and the external device (the second device). Claim 6 already is directed to a computer system in which the single diode is provided for protection of the internal components of the computer system from both over-voltages associated with the computer system itself and over-voltages associated with an external device. Thus, independent claims 1 and 6 patentably define over the prior art. The remaining claims (claims 2-5, and 7) depend from these independent claims and are thus in allowable condition for the same reasons.

Claims 8 and 9 have been added to provide a different scope of claim coverage.

Conclusion

The present invention is not taught or suggested by the prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims. An early Notice of Allowance is earnestly solicited.

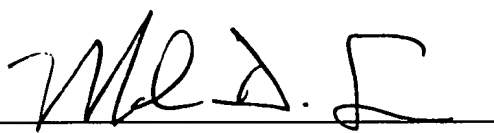
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Enclosed herewith, in triplicate, is a Petition for extension of time to respond to the Examiner's Action. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment associated with this communication to Deposit Account No. 19-5425.

Respectfully submitted

5/3/04
Date


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